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Home Drying Manual

for

Vegetables and Fruits

1917

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FOOD DRYING A NATIONAL NEED

Drying vegetables and fruits for winter use is one of the vital national needs of wartime. As a national need it becomes a patriotic duty. As a patriotic duty it should be done in every family.

Failure to prepare vegetables and fruits for winter use by Drying is one of the worst examples of American extravagance. During the summer nature provides an over-abundance. This year, with the planting of 2,000,000 home food gardens, stimulated by the National Emergency Food Garden Commission, this abundance will be especially large. The excess supply is not meant to go to waste. The over-abundance of the summer should be made the normal supply of the winter. The individual family should conduct Drying on a liberal scale. In no other way can there be assurance that America's food supply will meet our own needs. In no other way, surely, can we answer the enormous demands made upon us for furnishing food for our European Allies.

IMPORTANCE OF FOOD THRIFT

The reckless extravagance of living from hand to mouth has become a national trait. So frequently today's order from the grocer is for today's needs. The needs of tomorrow and next winter are left to take care of themselves. This results in heavy losses of food products during the growing season, when they are plentiful, and high prices during the winter when production is stopped. Winter buying of vegetables and fruits is costly. It means that you pay transportation, cold-storage and commission

merchants' charges and profits. Summer is the time of lowest prices. Summer, therefore, is the time to buy for winter use.

Every pound of food products grown this year will be needed to combat Food Famine. The loss that can be prevented, the money saving that can be effected and the transportation relief that can be brought about make it essential that every American household should make vegetable and fruit Drying a part of its program of Food Thrift. The results can be gained in no other way.

Vegetable and fruit Drying has been little practiced for a generation or more. Its revival on a general scale is the purpose of this manual. There is no desire to detract from the importance of canning operations. Drying must not be regarded as taking the place of the preservation of vegetables and

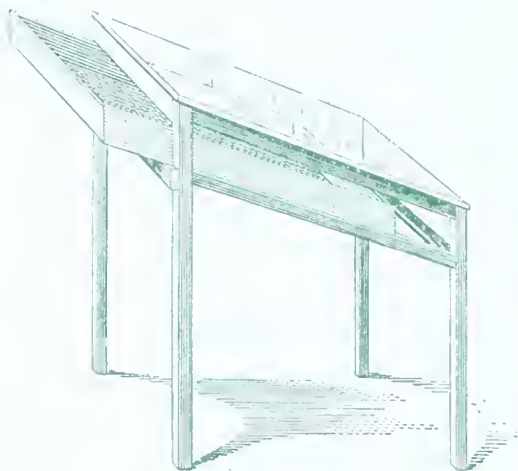


FIG. 1.—Small outdoor drier, easily made at home. It has glass top, sloping for best exposure to sun. The tray is shown partly projecting, to indicate construction. Protect openings around tray with cheesecloth, as explained on page 3.

fruits in tins and glass jars. It must be viewed as an important adjunct thereto. Drying is important and economical in every home, whether on the farm, in the village, in the town, or in the city. For city dwellers it has the special advantage that little storage space is required for the dried food. One hundred pounds of some fresh vegetables will reduce to 10 pounds in drying without loss of flavor or food value.

This year's need for vegetable and fruit Drying is given added emphasis by the shortage of tin for the manufacture of cans. This condition has created an unusual demand for glass jars. For this year, therefore, Drying is of more than normal importance. Dried products can be stored in receptacles that could not be used for canning.

DRYING IS SIMPLE

A strong point in connection with vegetable and fruit Drying is the ease with which it may be done. Practically all vegetables and fruits may be dried. The process is simple. The cost is slight. In every home the necessary outfit, in its simplest form, is already at hand. Effective Drying may be done on plates or dishes placed in the oven, with the oven door partially open. It may be done on the back of the kitchen stove, with these same utensils, while the oven is being

used for cooking. It may also be done on sheets of paper or lengths of muslin spread in the sun.

Apparatus for home Drying on a large scale may be made at home or bought at small cost. Still larger equipment may be bought for community drying operations in which a group of families combine for cooperative work, at a school or other convenient center. This latter is especially recommended as making possible the use of the most improved outfits at slight cost to the individual family.

METHODS OF DRYING

For home Drying satisfactory results are obtained by any one of three principal methods. These are:

1. Sun Drying.
2. Drying by Artificial Heat.
3. Drying by Air-blast. (As with a electric fan.)

These methods may be combined to good advantage.

SUN DRYING

For Sun Drying of vegetables and fruit the simplest form is to spread the slices or pieces on sheets of paper or lengths of muslin and expose them to the sun. Muslin is to be preferred if there is danger of sticking. Sun Drying requires days that are

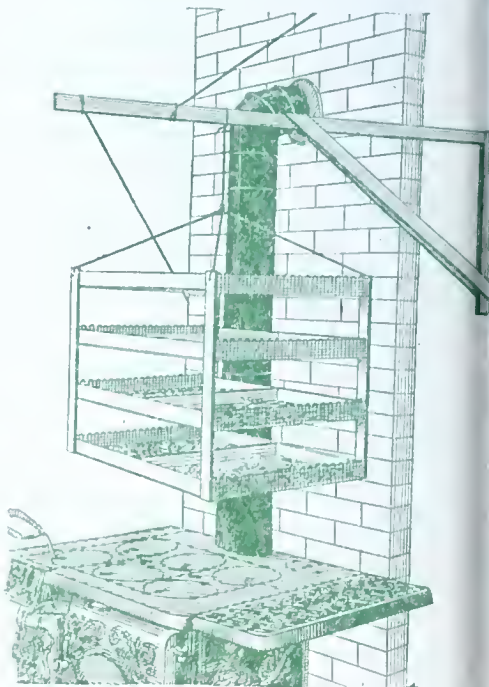


FIG. 2.—Homemade drier suspended from swinging crane over cookstove. Described on page 4.

bright and hot, with the air free from moisture. Care must be taken to provide protection from rain or dew, and just before sunset the vegetables or fruits which are being dried should be taken indoors over night. There should be a covering of cheesecloth, for the reason that if flies, moths, or other insects deposit their eggs on the pieces spoilage will result when the eggs hatch. The food should be carefully covered at all times and toward night extra precautions must be taken by carefully fastening the edges of the covering, as the danger from moths is then greatest. Once or twice a day the product should be turned over or stirred and the thinner pieces, which dry first, taken out. Sun Drying has the double advantage of requiring no expense for fuel and of freedom from danger of overheating.

Another form of Sun Drying is by the use of trays. To make a tray cheaply use strips of lumber three-quarters of an inch thick and 2 inches wide for the sides and ends. To form the bottom, laths should be nailed to these strips, with spaces of one-eighth of an inch between laths to permit air circulation. A length of 4 feet, corresponding to the standard length of laths, is economical. Instead of the laths galvanized wire screen, with openings of one-eighth or one-quarter of an inch may be used. In using wire, the size of the tray should be regulated by the width of wire screen obtainable. The trays should be of uniform size in order that they may be stacked together for convenience in handling.

A small homemade Sun Drier, easily constructed (Fig. 1), is made of light strips

of wood, a sheet of glass, a small amount of galvanized wire screen and some cheesecloth. A convenient size for the glass top is 18 by 24 inches. To hold the glass make a light wooden frame of strips of wood $\frac{1}{2}$ -inch thick and 1 inch wide. This frame should have legs of material 1 by $1\frac{1}{2}$ inches,

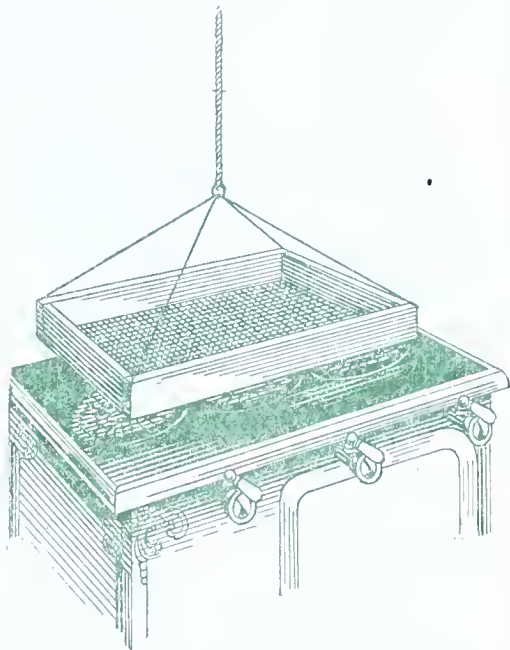


FIG. 4.—Simple drier made at home. This is merely a tray hung over cookstove.

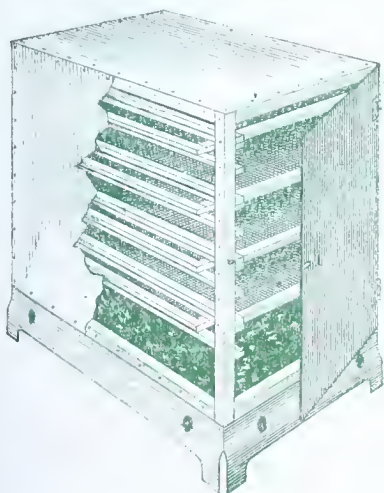


FIG. 3.—Another homemade drier. This sets on top of stove. Described on page 4.

with a length of 12 inches for the front legs and 18 inches for those in the rear. This will cause the top to slope, which aids in circulation of air and gives direct exposure to the rays of the sun. As a tray support, nail a strip of wood to the legs on each of the four sides, about 4 inches below the top framework and sloping parallel with the top. The tray is made of thin strips of wood about 2 inches wide and has a galvanized wire screen bottom. There will be a space of about 2 inches between the top edges of the tray and the glass top of the Drier, to allow for circulation. Protect both sides, the bottom and the front end of the Drier with cheesecloth tacked on securely and snugly, to exclude insects and dust without interfering with circulation. At the rear end place a cheesecloth curtain tacked at the top but swinging free below, to allow the tray to be moved in and out. Brace the bottom of this curtain with a thin strip of wood, as is done in window shades. This curtain is to be fastened to the legs by buttons when the tray is in place.

DRYING BY ARTIFICIAL HEAT

Drying by artificial heat is done in the oven or on top of a cookstove or range, in trays suspended over the stove or in a specially constructed drier built at home or purchased.

Oven Drying.—The simplest form of Oven Drying is to place small quantities of food-

stuffs on plates in a slow oven. In this way leftovers and other bits of food may be saved for winter use with slight trouble and dried while the stove is being used for cooking. This is especially effective for sweet corn. A few sweet potatoes, apples or peas, or even a single turnip may be dried and saved. To keep the heat from being too great leave the oven door partially open. For oven use a simple tray may be made of galvanized wire screen of convenient size, with the edges bent up for an inch or two on each side.

FIG. 5.—Commercial drier for use on top of stove or with its own furnace. Made without furnace, in sizes costing from \$16 to \$60; with furnace, \$24 to \$120.

with the edges bent up for an inch or two on each side.

Drying on top of or over stove or range.—An effective Drier for use over a stove or range may be made easily at home. Such a Drier is shown in Fig. 2. For the frame use strips of wood $\frac{1}{2}$ -inch thick and 2 inches wide. The trays or shelves are made of galvanized wire screen of small mesh tacked to the supports; or separate trays sliding on strips attached to the framework may be made. This Drier may be suspended from the ceiling over the kitchen stove or range or over an oil, gasoline, or gas stove, and it may be used while cooking is being done. If an oil stove is used there must be a tightly fitting tin or galvanized iron bottom to the Drier, to prevent the fumes of the oil from reaching and passing through the material which is to be dried. A bottom of this kind may be easily attached to any Drier, either homemade or commercial. A framework crane as shown in Fig. 2 makes it possible for this Drier to be swung to one side when not in use.

In Fig. 3 is shown another form of Homemade Cookstove Drier, more pretentious than that shown in Fig. 2, but still

easily and cheaply made. A good size for this is: base, 16 by 24 inches; height, 36 inches. The lower part, or supporting framework 6 inches high, is made of galvanized sheet iron, slightly flaring toward the bottom and with two ventilating holes in each of the four sides. The frame, which rests on this base, is made of strips of wood 1 or $1\frac{1}{2}$ inches wide. Wooden strips, $1\frac{1}{4}$ inches wide, and 3 inches apart, serve to brace the sides and furnish supports for the trays.

In a Drier of the dimensions given there is room for eight trays. The sides, top and back are of galvanized iron or tin sheets tacked to the framework, although thin strips of wood may be used instead of the metal. Small hinges and thumb latch are provided for the door. Galvanized sheet iron, with numerous small holes in it, is used for making the bottom of the Drier. To prevent direct heat from coming in contact with the product, and also to distribute the heat by radiation, a piece of galvanized sheet iron is placed 2 inches above the bottom. This piece is 3 inches shorter and 3 inches narrower than the bottom and rests on two wires fastened to the sides.

The trays are made of wooden frames of 1-inch strips to which is tacked galvanized wire screen. Each tray should be 3 inches shorter than the Drier and enough narrower to allow it to slide easily on the supports in being put in or taken out.

In placing trays in the Drier push the lower one back as far as it will go, leaving a 3-inch space in front. Place the next tray even with the front, leaving the space at the back. Alternate all the trays in this way, to facilitate the circulation of the heated air. It is well to have a ventilating opening, 6 by 2 inches, in the top of the Drier to discharge moisture. It is helpful to shift the trays during the drying process, to procure uniformity of drying.

One of the simplest forms of homemade Drier is a tray with bottom of galvanized wire screen suspended over stove or range, as shown in Fig. 4.

Commercial Driers.—Cookstove Driers are in the market in several types. One of these, shown in Fig. 5, has a series of trays in a framework, forming a compartment. This is placed on top of the stove. Similar



FIG. 6.—Another type of commercial drier for use on top of stove. Its cost is \$60.

Driers are shown in Figs. 6, 7, and 8. Another, shown in Fig. 9, is a shallow metal box to be filled with water, and so constructed that one end may rest on the back of the stove and the other on a leg reaching to the floor, or it may be suspended over a lamp. This may be bought for \$6 in a size having capacity of 1 to 2 bushels a day, or for \$12 with a capacity of 2 to 4 bushels.

Commercial Driers having their own furnaces may be bought at prices ranging from \$24 to \$120. This type is pictured in Figs. 10, 11 and 12. Some of these, in the smaller sizes, may be bought without furnace, and used on the top of the kitchen stove, as Fig. 5. The cost is from \$16 upwards.

DRYING BY AIR BLAST (ELECTRIC FAN)

The use of an electric fan is an effective means of Drying. Fig. 13 shows how this household article is used. Sliced vegetables or fruits are placed on trays 1 foot wide and 3 feet long. These trays are stacked and the fan placed close to one end, with the current directed along the trays, lengthwise. The number of trays to be used is regulated by the size of the fan. Drying by this process may be done in twenty-four hours or less. With sliced string beans, and shredded sweet potatoes a few hours is sufficient.

SOME OF THE DETAILS OF DRYING

As a general rule vegetables or fruits, for Drying, must be cut into slices or shreds, with the skin removed. In using artificial heat be careful to start at a comparatively low temperature and gradually increase. Details as to the proper scale of temperatures for various vegetables and fruits are given in the directions in this manual and in the time table on page 11. To be able to gauge the heat accurately a thermometer must be used. An oven thermometer may be bought at slight cost or the ordinary chemical thermometer may be suspended in oven or Dryer. It should be remembered that excessive heat



FIG. 7.—A commercial drier that leaves room for cooking on top of cookstove.

will cause a chemical thermometer to break. In the detailed instructions on pages 7, 8, and 9, the temperatures used are Fahrenheit. The time and temperatures indicated are for Drying by artificial heat.

The actual time required for Drying cannot be given, and the person in charge must exercise judgment on this point. A little experience will make it easy to determine when products are sufficiently dried. When first taken from the Dryer vegetables should be rather brittle but not so dry as to snap or crackle, and fruits rather leathery and pliable. Raspberries, particularly, should not be dried too hard, as this will keep them from resuming their natural shape when soaked in water for use. Material will mold if not dried enough.

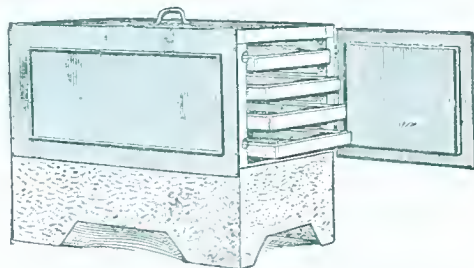


FIG. 8.—Another commercial drier for use on top of cookstove.

CONDITION BEFORE STORING

It is important to "condition" Dried Products, before storing them for the winter. This means that they should be placed in boxes and poured from one box to another once a day for three or four days to mix thoroughly. If any part of the material is then found to be too moist, return to Dryer for a short Drying. **PRACTICALLY ALL DRIED PRODUCTS SHOULD BE CONDITIONED.**

PREPARING FOOD MATERIAL FOR DRYING

A sharp kitchen knife will serve every purpose in slicing and cutting vegetables and fruits for Drying, if no other device is at hand. The thickness of the slices should be from an eighth to a quarter of an inch. Whether sliced or cut into strips the pieces should be small so as to dry quickly. They should not, however, be so small as to make them hard to handle or to keep them from being used to advantage in preparing dishes for the table such as would be prepared from fresh products. Meat grinders are useful with some materials and there are kraut slicers on the market which may be used to advantage in cutting potatoes and cabbage and other products. A rotary slicer may also be used.

Vegetables and fruits for Drying should be fresh, young and tender. As a general rule root vegetables should be peeled. Cleanliness is imperative. Knives and

slicing devices must be carefully cleansed before and after use. A knife that is not bright and clean will discolor the product on which it is used. Root crops must be washed so thoroughly that no earthy flavor or smell will remain. A single decayed root will injure the flavor of a large quantity of prepared material.

BLANCHING AND COLD DIPPING

Blanching is desirable for successful vegetable Drying. Blanching gives more thorough cleansing, removes strong odors and flavors, and softens and loosens the fiber, allowing quicker and more uniform evaporation of the moisture. It is done by

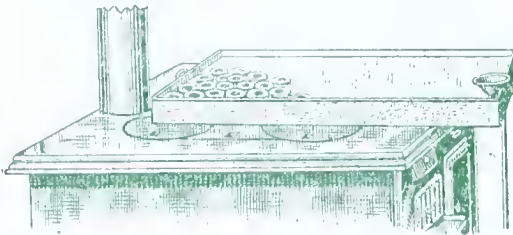


FIG. 9.—Commercial drier costing \$6 to \$12, placed on top of cookstove and supported at one end by a leg reaching the floor. This drier may be suspended over a lamp.

placing the vegetables in a piece of cheesecloth, a wire basket or other porous container and plunging them into boiling water. The time required for this is short and varies with different vegetables. For the proper time in each case consult the directions given for Drying on pages 7, 8 and 9 and the time table on page 11. Blanching should be followed by the cold dip, which means plunging the vegetables into cold water for an instant after removal from the hot water. Cold dipping hardens the pulp and causes vegetables to retain their original coloring. After blanching and dipping, the surface moisture should be removed by placing the vegetables between two towels or by exposure to the sun.

STORAGE FOR DRIED PRODUCTS

Of importance equal to proper Drying is the proper packing and storage of the finished product. With the scarcity of tins and the high prices of glass jars it is recommended that other containers be used. Those easily available are baking powder cans and similar covered tins, pasteboard boxes having tight fitting covers, strong paper bags, and patented paraffin paper

boxes, which may be bought in quantities at comparatively low cost. A paraffin container of the type used by oyster dealers for the delivery of oysters will be found inexpensive and easily handled. This is shown in Fig. 14. If using this, or a baking powder can or similar container, after filling adjust the cover closely. The cover should then be sealed. To do this paste a strip of paper around the top of the can covering the joint between can and cover, for the purpose of excluding air. Pasteboard boxes should also be sealed in this way. Paraffin containers should be sealed by applying melted paraffin with a brush to the joint. Fig. 15 shows a 3-lb. butter container which may be used.

The products should be stored in a cool, dry place, well ventilated and protected from rats, mice and insects. In sections where the air is very moist moisture-proof containers must be used. It is good practice to use small containers so that it may not be necessary to leave the contents exposed long after opening and before using. If a paper bag is used the top should be twisted, doubled over and tied with a string. Moisture may be kept out of paper bags by coating them by using a brush dipped into melted paraffin. Another good precaution is to store bags within an ordinary lard pail or can or other tin vessel having a closely fitting cover. It is desirable to examine products within twenty-four hours after packing to see if moisture remains. If it is found that the material is still moist it should be dried further, to prevent molding. For convenience all packages should be carefully labeled.

DANGER FROM INSECTS

In addition to exercising great care to protect vegetables and fruits from insect during the Drying process, precaution should be taken with the finished product to prevent the hatching of eggs that may have been deposited. One measure that is useful is to subject the dried material to a heat of 160° F. before storing it away. If this heat is applied long enough to penetrate throughout such part as may be infested, the eggs will be killed.

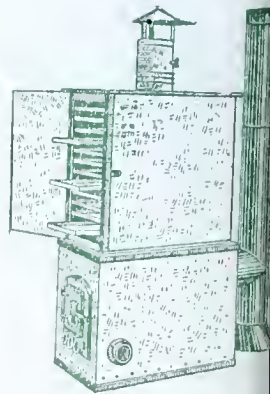


FIG. 10.—One type of commercial drier with furnace, in sizes costing from \$24 to \$120.

WINTER USE OF DRIED PRODUCTS

In preparing dried vegetables and fruits for use the first process is to restore the water which has been dried out of them. This requires time. In general the longer the Drying process, the longer the soaking required.

After soaking, dried products may be cooked in almost any of the ways in which fresh ones may be cooked, according to recipes in most cook books.

DIRECTIONS FOR VEGETABLE DRYING

Green String Beans.—Select only such beans as are in perfect condition for table use. Wash carefully and string. If full grown they should be slit lengthwise or cut—not snapped—into pieces $\frac{1}{4}$ to 1 inch long. If young and tender dry them whole. Blanch six to ten minutes. To set color, add one-half teaspoonful of soda to each gallon of boiling water. After blanching, dip quickly into cold water, then drain thoroughly to remove surface moisture. Drying time for young beans two hours; for those more mature, three hours. Start at temperature of 110° F. and raise gradually to 145° .

Wax Beans.—These are dried in the same manner as green string beans.

Lima Beans.—If lima beans are gathered when young and tender, shell them, wash, and then blanch five to ten minutes, the time varying with maturity and size. Cold dip. Remove surface moisture. Drying time three to three and one-half hours. Start at temperature of 110° F. and raise gradually to 145° .

Garden Peas.

—Garden peas with nonedible pod are taken when of size suitable for table use. Blanch three to five minutes, cold dip, remove surface moisture and spread in single layers on trays. Drying time three to three and one-half hours. Start at temperature of 110° F. raising slowly, in

about one and one-half hours, to 145° and then continue one and one-half to two hours at 145° .

For use in soups or puree shell mature peas, pass them through a meat grinder, spread the pulp on trays and dry.

With young and tender sugar peas use the pod also. After washing, cut into $\frac{1}{4}$ -inch pieces. Blanch six minutes, cold-dip, and remove surface moisture. Drying time

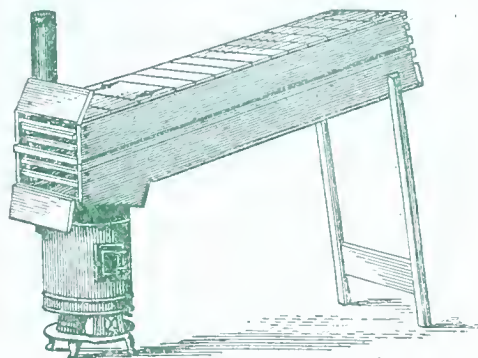


FIG. 12.—Commercial drier with furnace, in sizes costing from \$75 to \$650.

three to three and one-half hours. Start at temperature of 110° F. and raise gradually to 145° . The use of soda is unnecessary.

Sweet Corn.—Select ears that are young and tender and freshly gathered. Blanch on cob in steam or boiling water—preferably steam—for five to ten minutes to set milk. If boiling water is used, add a teaspoonful of salt to each gallon. Cold-dip, drain thoroughly, cut off half the kernel with a sharp knife and scrape off the remainder, taking care not to include the chaff. Drying time, three to four hours. Start at temperature of 110° F., and raise gradually to 145° .

In using field corn it should be taken at the roasting-ear period of ripeness and the ears should be plump.

To prepare for sun-drying, corn should first be dried in the oven for ten or fifteen minutes. After sun drying is completed, the corn should again be heated in oven to kill possible insect eggs.

Carrots and Parsnips.—Clean thoroughly and remove outer skin, preferably with a stiff bristle brush; or the skin may be removed by paring or scraping. Slice into thickness of $\frac{1}{8}$ of an inch. Blanch six minutes, cold-dip and remove surface moisture. Drying time, two and one-half to three hours. Start at temperature of 110° F. and raise gradually to 150° .

Kohlrabi, Celeriac and Salsify are dried in the same way as Carrots and Parsnips.

Onions and Leeks.—After washing, peel-

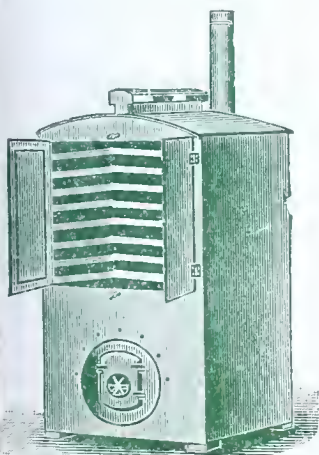


FIG. 11.—Another type of commercial drier with furnace.

ing and cutting into $\frac{1}{8}$ to $\frac{1}{4}$ -inch slices for onions, and $\frac{1}{4}$ -inch strips for leeks, blanch in boiling water or steam for five minutes, cold-dip and remove surface moisture. Drying time, two and one-half to three hours. Start at temperature of 110° F. and raise gradually to 140°.

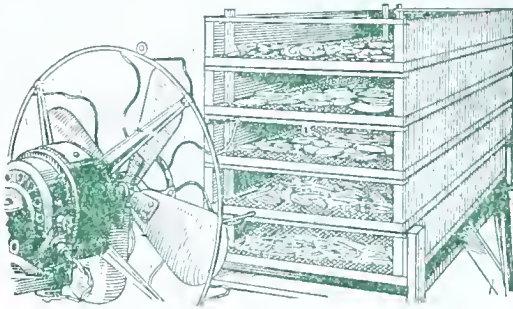


FIG. 13.—Series of trays with ends facing electric fan, for drying by air blast.

Beets.—Boil whole until more than three-fourths cooked, without removing skin. After dipping in cold water, peel and cut into $\frac{1}{8}$ to $\frac{1}{4}$ -inch slices. Drying time, two and one-half to three hours. Start at temperature of 110° F. and raise gradually to 150°.

Another method is to blanch long enough to loosen skin, cold-dip, slice and dry. Drying time and temperature approximately as in method given above.

Beet Tops and Swiss Chard.—Select tops of young beets suitable for greens. Wash carefully, cut leafstalk and blade into pieces $\frac{1}{4}$ of an inch long, spread on screens and dry.

Celery.—After washing carefully cut into 1-inch pieces, blanch three minutes, cold-dip and remove surface moisture. Dry slowly. Drying time, three to four hours. Start at temperature of 110° F. and raise to 140°.

Cabbage.—Take heads that are well developed. Remove all loose outside leaves. Shred or cut into strips a few inches long. Remove the hard core. Blanch ten minutes, cold dip, drain, remove surface moisture. Drying time, three hours. Start at temperature of 110° F. and raise gradually to 145°.

Pumpkin and Summer Squash.—After paring cut into $\frac{1}{2}$ -inch strips. Blanch three minutes. Cold-dip, remove surface moisture and dry slowly. Drying time, three to four hours. Start at temperature of 110° F. and raise to 140°.

Okra.—After washing, blanch three minutes in boiling water with one-half teaspoonful of soda to each gallon. Cold-dip. With young and tender pods dry whole; cut older pods into $\frac{1}{4}$ -inch slices. Drying time, two to three hours. Start at tem-

perature of 110° F. and raise gradually to 140°.

Okra may also be dried by being strung on a string and hung over the stove. This should not be done except with young and tender pods. Heat in oven before storing.

Cauliflower.—After cleaning, divide into small pieces. Blanch six minutes and cold-dip. Drying time, three to three and one-half hours. Start at temperature of 110° F. and raise to 145°. Although turning dark while drying, Cauliflower will regain part of original color in soaking and cooking. Dried Cauliflower is especially good for soups and omelets.

Brussels Sprouts.—The drying process is the same as with cauliflower, with the addition of a pinch of soda to the blanching water.

Rhubarb.—Slit the larger stems lengthwise, cut into $\frac{1}{2}$ to $\frac{3}{4}$ -inch lengths. Do not use the leaf. Blanch three minutes and cold-dip. Dry thoroughly. Start at temperature of 110° F. and raise gradually to 140°.

Peppers.—Steam until skin softens; or place in biscuit pan in oven and heat until skin blisters. Peel, split in half, take out seed. Start drying at temperature of 110° F. and gradually increase to 140°. Thick fleshed peppers, such as pimientos, must be dried very slowly and evenly. Small varieties of red peppers may be spread in the sun until wilted and the drying finished in a drier, or they may be entirely dried in the sun.

Another plan for drying peppers is to split them on one side, remove seed, start with air drying and finish in a drier at 140°.

Spinach, Parsley and other Herbs.—After washing carefully and removing leaves slice, blanch four to six minutes in steam cold-dip and dry in sun or by artificial heat following directions for cabbage. If steam is not easily available dry without blanching or cold dipping.

Celery tops, mint, sage and herbs of all kinds for flavoring are treated in the same way.

Sweet Potatoes.—Wash, boil until almost cooked, peel, slice or run through meat chopper, spread on trays and dry until brittle. Sliced sweet potatoes may be dried without boiling. If this is done,

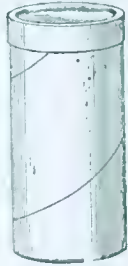


FIG. 14.—Paraffin paper container which sells at \$2 per hundred. By pasting strip of paper around top, where cover joins container, this can be made airtight. It is excellent for storing dried vegetables and fruits. It will last for years of use.

dipping in cold water just before drying will brighten color.

Soup Mixtures.—Vegetables for soup mixtures are prepared and dried separately. These are mixed as desired.

Tomatoes.—Blanch long enough to loosen skin, cold-dip, peel, slice to thickness of $\frac{1}{8}$ of an inch. Start at temperature of 110° F., and gradually raise to 140° , continuing until thoroughly dried. Another plan is after peeling, to cut crosswise in center, sprinkle with sugar and dry at temperature as above until the finished product resembles dried figs.

Asparagus.—The edible portion should be blanched from 3 to 5 minutes, cold dipped, the stalks slit lengthwise into two strips if of small or medium size or into four strips if of large size. Drying time 4 to 8 hours. Start at temperature of 110° F. and raise gradually to 140° .

The hard ends of the stalk, which are not edible, should be dried for soup stock. Blanch 10 minutes, cold-dip, slice into 2 to 4 pieces, according to size, and dry as described above.

DIRECTIONS FOR FRUIT DRYING

Fruits may be dried in the sun until the surface begins to wrinkle, then finished in the drier. With stone fruits, such as peaches, plums, apricots and cherries, none but fruits that are fresh, ripe and in perfect condition should be used. With apples, pears and quinces effective thrift calls for using the sound portions of fruit that may be partially wormy or imperfect. When properly dried, fruits should be entirely free from moisture when pressed between the fingers on removal from drier. Line trays with cheesecloth or wrapping paper before spreading fruit on them. Cool quickly after drying to prevent shriveling.



FIG. 15.—Three-pound butter container of paraffin paper, costing \$7.50 or hundred. The cover wedges tightly to top and the rim may be coated with paraffin, making a good container for storing. This, too, may be used for several successive years.

Berries.—Pick over, removing all leaves and stems, wash and remove surface moisture, handling with care to prevent bruising. Spread in thin layers and dry slowly. The total drying time is four to five hours. Start at temperature of 110° F., raising to 125° in about two hours. Then raise temperature to 140° and maintain two to three hours longer.

Cherries.—After washing and removing surface moisture, spread unseeded in thin layers. Drying

time two to four hours. Start at temperature of 110° F., and raise gradually to 150° . If preferred the pits may be removed, although this causes loss of juice.

Plums and Apricots.—Select fruit that is medium ripe. Let stand in boiling water in covered vessel for twenty minutes. Drain and remove surface moisture. Drying time, four to six hours. Start at temperature of 110° F. and raise gradually to 150° . Do not use small, thin-fleshed varieties.

Apples, Pears and Quinces.—Pare, core and slice. If a light colored product is desired prepare one apple, pear or quince at a time and dip the slices immediately, for one minute, into cold water containing 8 teaspoonfuls of salt to the gallon. The salt water prevents discoloration. If preferred, core the whole fruit after peeling and slice into rings, dipping these for one minute into cold salted water as described above. Remove surface moisture. Drying time, four to six hours, or until leathery and pliable. Start at temperature of 110° F. and raise gradually to 150° . Pears may be steamed ten minutes after slicing and before drying. Quinces are treated in the same way as pears.

Peaches.—Cut into halves, remove pit, place pit surface up and dry as directed for apples. If it is desired to have peeled product, loosen the skins with solution made of 8 ounces of lye in $4\frac{1}{2}$ gallons of water. This solution should be boiling and the peaches plunged into it until the skin cracks. Then remove peaches and dip into four changes of cold water and rub off the skin with the hands. Cut into halves and dry as above.

PICKLING

Pickling is an important branch of home preparedness for the winter months. Instructions for some of the most commonly used methods are given herewith.

Green Tomato Pickle.—Take 4 quarts of green tomatoes, 4 small onions and 4 green peppers. Slice the tomatoes and onions thin. Sprinkle over them $\frac{1}{2}$ cup of salt and leave overnight in crock or enameled vessel. The next morning drain off the brine. Into a separate vessel put 1 quart vinegar, 1 level tablespoonful each of black pepper, mustard seed, celery seed, cloves, allspice and cinnamon and $\frac{3}{4}$ cup of salt. Bring to a boil and then add the prepared tomatoes, onions and peppers. Let boil for twenty minutes. Fill jars and seal while hot.

Pickled Onions.—Take small white onions of uniform size, peel, cover with fresh

water and let stand for two days, changing water after first twenty-four hours. Wash thoroughly and put into brine for four days, changing brine at end of second day. Remove from brine and place in boiling water for ten minutes, then place in cold water for two hours. Add a few red peppers and garnish with sprigs of mace, and pack into jars. Fill jars to overflowing with spiced vinegar which has stood for several days with spice bags left in it. Place in hot water as for pickles.

To make spiced vinegar take $\frac{1}{2}$ gallon vinegar, $1\frac{1}{2}$ tablespoonfuls each of mustard seed and celery seed, 1 tablespoonful each of cinnamon and salt, $\frac{1}{2}$ cup grated horseradish and 1 cup sugar.

Chowchow.—Take $\frac{1}{4}$ peck each of green tomatoes and small onions, 3 cauliflowers, 3 cucumbers, 6 large red peppers and $\frac{1}{4}$ peck of yellow string beans. Chop fine. Place overnight in brine made of 5 pints of water and 1 pound of salt. The next morning bring brine and vegetables to a boil for a few minutes. In separate vessel bring to a boil 1 gallon cider vinegar, to which add a paste of a small quantity of water, $\frac{1}{4}$ pound of ground mustard, $\frac{1}{4}$ ounce turmeric, 1 cup brown sugar and 2 tablespoonfuls flour. To this paste add $\frac{1}{2}$ ounce celery seed, place in the vinegar and boil until begins to thicken. Drain brine from vegetables, place them in another saucepan and pour the boiling vinegar mixture over them. Mix well, fill jars and seal while hot. The chowchow should be about the consistency of thick cream. Flour may be added to thicken. Celery or cabbage may be used instead of cauliflower.

STORAGE OF VEGETABLES AT HOME

The storage of vegetables in their natural condition is an important adjunct to canning and drying. Potatoes, beets, carrots, parsnips, salsify, turnips, cabbage, celery, onions, sweet potatoes, dry beans, and dry lima beans may be stored.

In a house heated by a cellar furnace, partition off a small room. It is best to have in it at least one outside window for temperature regulation. An earth floor is desirable. In this room may be stored potatoes, beets, carrots, parsnips, turnips, and salsify. Put them in bins or in boxes, baskets or barrels. The vegetables should be harvested when the ground is dry and should lie outdoors until any moisture on them has evaporated. Remove the tops from beets, turnips, carrots, and salsify.

For out-door storage make a pit 6 or 8 inches deep and as large as needed, in well-drained place. Line this with straw leaves, or similar material and place the vegetables on this lining in a conical pile. Cover the vegetables with straw leaves or something similar and cover this with enough earth to prevent freezing. It is well to make several small pits rather than one large one for the reason that when a pit has been once opened the entire contents should be removed. This form of storage is used for potatoes, beets, carrots, turnips, parsnips, cabbage, and salsify. It is well to store several varieties of vegetable in one pit, for convenience in winter use.

For cabbage the pit should be long and narrow. The cabbages are placed in rows with heads down and covered with dirt. The removal of a portion of this supply does not disturb the remainder. Cabbage may be stored in the cellar in boxes or barrels of earth or sand.

In storing celery in a pit or trench, the plants are set side by side as close as they may be packed and wide boards set up along the outside of the pit. Dirt is banked against these boards and the top covered with corn fodder or similar covering.

An out-door cellar makes a good storage place. In cold climates this should be partially underground. A side-hill location is desirable for ease in handling the vegetables. To make such a cellar dig a shallow excavation, and in this erect a frame by setting posts in rows near the dirt wall. Saw these posts off at uniform height and place plates on their tops. On these plates place rafters. Board up completely with the exception of a place for the door. The whole should be covered with dirt and sods and in cold climates added protection may be given by a layer of straw, fodder, or similar material. A dirt floor is best, and some moisture is desirable.

This form of storage is especially good for the use of several families.

Cold-frames may also be used to advantage in storing vegetables if the drainage is made thorough. After the frames are filled the sash should be covered with boards and the outside banked with soil or manure. As the weather becomes severe a covering of straw or mats is necessary. This covering should be heavy enough to prevent freezing.

Cauliflower which has not matured may be taken up and planted in shallow boxes of soil in a light place in the cellar. If kept well watered it will mature for winter use.

Onions require a cool dry place. They should be cured, dried, and tops removed before storing. Keep them in basket

trays, or other holders which let the air circulate.

Potatoes may be stored in a cool, frostless cellar in boxes, baskets or in long narrow bins divided into sections to hold about two to three bushels. A covering of sand or soil keeps moisture in. They should not be washed nor exposed to light for any length of time after harvesting, as that will cause them to turn green. If they begin sprouting in the spring all the shoots should be rubbed off. The bins should be examined occasionally and any rotting potatoes removed to prevent the spread of infection.

Squashes and sweet potatoes are susceptible to cold and moisture, and for that reason should be stored in a dry place where the temperature will approximate 50° F. Squashes may be kept by piling on a dry floor and covering with rugs or carpets, but care must be taken that they do not become bruised before storing.

Sweet potatoes may be packed in layers in dry sand, wheat chaff, or charcoal, and kept in a warm cellar. A simple and effective method is to place the sweet potatoes in baskets near furnace.

TIME TABLE FOR BLANCHING AND DRYING

The following time table shows blanching time for vegetables and the approximate time required for drying vegetables and fruits, with temperatures to be used in drying by artificial heat:

Vegetables	Blanching time	Drying time	Temperature (Fahrenheit)
	Minutes	Hours	Degrees
Green string beans.....	6 to 10	2 to 3	110 to 145
Wax beans.....	6 to 10	2 to 3	110 to 145
Lima beans (young).....	5 to 10	3 to 3½	110 to 145
Garden peas (mature).....	3 to 5	3 to 3½	110 to 145
Sugar peas (young).....	6	3 to 3½	110 to 145
Sweet corn.....	5 to 10	3 to 4	110 to 145
Carrots.....	6	2½ to 3	110 to 150
Parsnips.....	6	2½ to 3	110 to 150
Kohlrabi, celeriac and salsify.....	6	2½ to 3	110 to 150
Onions.....	5	2½ to 3	110 to 140
Leeks.....	5	2½ to 3	110 to 140
Beets.....	Till skin cracks	2½ to 3	110 to 150
Cabbage.....	10	3	110 to 145
Pumpkin.....	3	3 to 4	110 to 140
Summer squash.....	3	3 to 4	110 to 140
Celery.....	3	3 to 4	110 to 140
Swiss chard.....	3	3 to 4	110 to 140
Okra.....	3	2 to 3	110 to 140
Cauliflower.....	6	3 to 3½	110 to 145
Brussels sprouts.....	6	3 to 3½	110 to 145
Rhubarb.....	3		110 to 145
Peppers.....			110 to 140
Spinach, parsley and other herbs.....	4 to 6	3	110 to 145
Tomatoes.....	To loosen skin		110 to 145
Asparagus.....	5 to 10	4 to 8	110 to 140
Fruits			
Berries.....		4 to 5	110 to 140
Cherries.....		2 to 4	110 to 150
Plums.....		4 to 6	110 to 150
Apricots.....		4 to 6	110 to 150
Apples.....		4 to 6	110 to 150
Pears.....		4 to 6	110 to 150
Quinees.....		4 to 6	110 to 150
Peaches.....		4 to 6	110 to 150

Follow instructions on pages 6, 7, 8 and 9, as to cold dipping after blanching.



After J. N. Darling, in *New York Tribune*

THE NATIONAL EMERGENCY FOOD GARDEN COMMISSION

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